AMENDMENTS TO THE SPECIFICATION:

Please amend the specification as follows:

Page 2, replace the paragraphs beginning on line 26 through page 5, line 11 with the following amended paragraphs:

To the above ends, **[[the]]** <u>a</u> method ~~of claim~~ 1 for drawing a dent distribution diagram in shotblasting is a method for simulating by a computer drawing a dent distribution diagram of a surface processed by a shotblasting process, comprising: a first inputting step for inputting a dent unit area, the number of dents, and an evaluation area to the computer; a first computing step for computing a dent rate from a theoretical formula $C=100\{1-\exp(-A \cdot N/As)\}$, based on the dent unit area, said number of dents, and the evaluation area inputted to the computer, where C is a dent rate (coverage) (%), A is a dent unit area (mm^2), N is the number of dents (piece $\cdot$ mm^2 $\cdot$ sec), and As is an evaluation areas (mm^2); a first calculating step for calculating, based on the dent unit area, said number of dents, and the evaluation area input to the computer, a drawing dent unit area, the number of dents to be drawn, and a drawing evaluation area, which are necessary to draw a dent distribution status by a drawing device; a second calculating step for performing calculations necessary to display in the drawing evaluation area a dent pattern of said number of dents to be drawn, each of the dents having the drawing dent unit area; and a step for displaying or printing by the drawing device the dent rate and the results of the calculations performed by the second calculating step.

[[The]] <u>A</u> method ~~of claim~~ 2 for drawing a dent distribution diagram in shotblasting is a method for simulating by a computer drawing a dent distribution

diagram of a surface processed by a shotblasting process, comprising: a dent rate inputting step for inputting a dent rate to the computer; a dent existence ratio computing step for computing a dent existence ratio K from a theoretical formula C=100{1-exp(-A · N/As)}, based on the inputted dent rate, where C is a dent rate (coverage) (%), A is a dent unit area (mm^2), N is the number of dents (piece · mm^2 · sec), As is an evaluation area (mm^2), and K is a dent existence ratio (A · N/As); a second inputting step for inputting at least two of a drawing dent unit area, the number of dents to be drawn, and a drawing evaluating area to the computer; a third calculating step for calculating, based on the computed dent existence ratio and the inputted at least two of the drawing dent unit area, said number of dents to be drawn, and the drawing evaluation area, a drawing dent unit area, the number of dents to be drawn, and a drawing evaluation area, that are necessary to draw a dent distribution status by a drawing device; a fourth calculating step for performing calculations necessary to display in the drawing evaluation area a dent pattern of said number of dents to be drawn, each of the dents having the drawing dent unit area; and a step for displaying or printing by the drawing device the dent rate and the results of the calculations performed by the second calculating step.

[[The]] A method ~~of claim~~ 3 for drawing a dent distribution diagram in shotblasting is a method for simulating by a computer drawing a dent distribution diagram of a surface processed by a shotblasting process, comprising: a third inputting step for inputting a shotblast processing condition to the computer; a dent unit area computing step for computing a dent unit area from empirical formulas A= π **[[D2/4]]** $D^2/4$ and D=k1 · d · {1-exp(k2 · HVa/HVw)}/{1-exp(k3 · V)}, based on the inputted shotblast processing condition, where k1, k2, and k3 are coefficients (having

dimensions), A is a dent unit area (mm^2), D is the diameter (mm) of a dent, HVa is the hardness (HV) of the projection material, d is the size (mm) of the particles of the projection material, v is a projection speed (m/sec), and HVw is the hardness (HV) of a product to be processed; a dent number computing step for computing the number of dents from an empirical formula $N=k4 \cdot M/(\rho \cdot$ [[d3/6]] $d^3/6 \cdot \pi) \cdot (t/60) \cdot As$, based on the inputted shotblast processing condition, where k4 is a coefficient (having dimensions), N is the number of dents (piece · mm^2 · sec), M is a projection amount (kg/min) of the projection material, t is a processing time (sec), F is the density (g/cm^3) of the projection material, As is an evaluation area (mm^2); a second dent rate computing step for computing a dent rate from a theoretical formula $C=100\{1-\exp(-A \cdot N/As)\}$, based on the computed dent unit area, said number of dents, and an evaluation area arbitrarily set, where C is a dent rate (%) (coverage), A is a dent unit area (mm^2), N is the number of dents (piece · mm^2 · sec), As is an evaluation area (mm^2); a fifth calculating step for calculating a drawing dent unit area, the number of dents to be drawn, a drawing evaluating area, that are necessary to display a dent distribution status by a drawing device, based on the computed dent unit area and said number of dents, and the evaluation area arbitrarily set; a sixth calculating step for performing calculations necessary to display in the drawing evaluation area a dent pattern of said number of dents to be drawn, each of the dents having the drawing dent unit area; and a step for displaying or printing by the drawing device the dent rate and the results of the calculations performed by the sixth step.

To achieve the purposes of the invention, [[the]] there is also provided a method ~~of claim 7~~ for setting a processing condition in a shotblasting process [[is]]

characterized in that a processing time is computed to attain a target dent rate from the number of dents per given dent unit area during a given period of time.

To achieve the purposes of the invention, **[[the]]** <u>there is also provided a</u> method ~~of claim 8~~ for setting a processing condition in a shotblasting process <u>that</u> comprises the steps of: computing a dent unit area from a given hardness of a projection material, a given projection particle size of a projection material, a given speed of the projection material, and a given hardness of a product to be processed; computing the number of dents necessary to attain a given target dent rate; and computing a processing time from the number of dents, a projection amount, a density of the projection material, and the projection particle size of the projection material.

Page 5, replace the paragraphs beginning on line 13 through line 15 with the following amended paragraphs:

Figure 1 is a flowchart corresponding to ~~claim~~ <u>method</u> 1.

Figure 2 is a flowchart corresponding to ~~claim~~ <u>method</u> 2.

Figure 3 is a flowchart corresponding to ~~claim~~ <u>method</u> 3.

Page 8, replace the paragraph beginning on line 5 with the following amended paragraph:

That is, the shotblast processing condition is inputted to the computer. The dent unit area is computed from empirical formulas A= π **[[D2/4]]** <u>$D^2/4$</u> and D=k1 · d · {1-exp(k2 · HVa/HVw)}/{1-exp(k3 · V)} based on the inputted shotblast processing condition, where k1, k2, and k3 are coefficients (having dimensions), A is a dent unit area (mm^2), D is a diameter (mm) of the dents, Hva is a hardness (HV) of the product to be processed, d is a projection material particle size (mm), v is a projection speed

(m/sec), and HVw is a hardness (HV) of the projection material. Next, the number of dents is computed from an empirical formula N = k4 · M/(ρ · **[[d3/6]]** <u>$d^3/6$</u> · π) · (t/60) · As based on the shotblast processing condition inputted to the computer, where k4 is a coefficient (having dimensions), N is the number of dents (piece · mm^2 · sec), M is a projection amount (kg/min), t is a processing time (sec), F is a density (g/cm^3) of the projection material, and As is an evaluation areas (mm^2). Next, the dent rate is computed from the theoretical expression, C=100{1-exp(-A · N/As)}, based on the computed dent unit area and the computed number of dents, and an evaluation area arbitrarily set, where C is a dent rate (%) (coverage), A is a dent unit area (mm^2), N is the number of dents (piece · mm^2 · sec), and As is an evaluation areas (mm^2).

Page 10, replace the paragraph beginning on line 11 through page 11, line 1 with the following amended paragraph:

The computer then calculates a dent unit area from the empirical formulas A=π **[[D2/4]]** <u>$D^2/4$</u> and D=k1 · d · {1-exp(k2 · HVa/HVw)}/{1-exp(k3 · V)} and calculates the number of dents from the empirical formula N=k4 · M/(ρ · **[[d3/6]]** <u>$d^3/6$</u> · π) · (t/60) · As. Next, it calculates a dent rate from the theoretical expression C=100{1-exp(-A · N/As)} based on the calculated dent unit area and number of dents, and the evaluation area arbitrarily set, and then calculates a drawing dent unit area, the number of dents to be drawn, and a drawing evaluation area, which are necessary to display a dent distribution status by the drawing device, based on the calculated dent unit area and number of dents, and the evaluation area arbitrarily set. Next, the computer performs calculations necessary to display in the drawing evaluation area a dent pattern of the number of dents to be drawn, each of the dents having the drawing dent unit area. This

calculation result and the dent rate are displayed or printed by the drawing device. Accordingly, a simulated drawing is obtained as in Figure 7. Figure 8 shows a result of an actual shotblasting process where the processing time of the shotblast processing condition is set as 3 second.

Page 11, replace the paragraph beginning on line 2 through page 12, line 9 with the following amended paragraph:

It is clear from the forgoing explanation that the method ~~of claim~~ 1 for drawing a dent distribution diagram in shotblasting may be a method for simulating by a computer drawing a dent distribution diagram of a surface processed by a shotblasting process, comprising: a first inputting step for inputting a dent unit area, the number of dents, and an evaluation area to the computer; a first computing step for computing a dent rate from a theoretical formula $C=100\{1-\exp(-A \cdot N/As)\}$, based on the dent unit area, said number of dents, and the evaluation area inputted to the computer, where C is a dent rate (coverage) (%), A is a dent unit area (mm^2), N is the number of dents (piece $\cdot$ mm^2 $\cdot$ sec), and As is an evaluation area (mm^2); a first calculating step for calculating, based on the dent unit area, said number of dents, and the evaluation area input to the computer, a drawing dent unit area, the number of dents to be drawn, and a drawing evaluation area, which are necessary to draw a dent distribution status by a drawing device; a second calculating step for performing calculations necessary to display in the drawing evaluation area a dent pattern of said number of dents to be drawn, each of the dents having the drawing dent unit area; and a step for displaying or printing by the drawing device the dent rate and the results of the calculations performed by the second calculating step, and that the method ~~of claim~~ 2 for drawing a dent distribution

diagram in shotblasting may be a method for simulating by a computer drawing a dent distribution diagram of a surface processed by a shotblasting process, comprising: a dent rate inputting step for inputting a dent rate to the computer; a dent existence ratio computing step for computing a dent existence ratio K from a theoretical formula $C=100\{1-\exp(-A \cdot N/As)\}$, based on the inputted dent rate, where C is a dent rate (coverage) (%), A is a dent unit area (mm^2), N is the number of dents (piece $\cdot$ mm^2 $\cdot$ sec), As is an evaluation area (mm^2), and K is a dent existence ratio ($A \cdot N/As$); a second inputting step for inputting at least two of a drawing dent unit area, the number of dents to be drawn, and a drawing evaluating area to the computer; a third calculating step for calculating, based on the computed dent existence ratio and the inputted at least two of the drawing dent unit area, said number of dents to be drawn, and the drawing evaluation area, a drawing dent unit area, the number of dents to be drawn, and a drawing evaluation area, that are necessary to draw a dent distribution status by a drawing device; a fourth calculating step for performing calculations necessary to display in the drawing evaluation area a dent pattern of said number of dents to be drawn, each of the dents having the drawing dent unit area; and a step for displaying or printing by the drawing device the dent rate and the results of the calculations performed by the second calculating step. Thus, supplying an arbitrary dent producing condition enables a computer to simulate drawing the dent rate of a product and the dent distribution diagram. This enables us to see the status of the finishing of the product on a desk without carrying out any actual shotblasting process.

Page 12, replace the paragraph beginning on line 10 through page 11, line 12 with the following amended paragraph:

Moreover, the method ~~of claim~~ 3 for drawing a dent distribution diagram in shotblasting may be a method for simulating by a computer drawing a dent distribution diagram of a surface processed by a shotblasting process, comprising: a third inputting step for inputting a shotblast processing condition to the computer; a dent unit area computing step for computing a dent unit area from empirical formulas A= π **[[D2/4]]** $\underline{D^2/4}$ and D=k1 · d · {1-exp(k2 · HVa/HVw)}/{1-exp(k3 · V)}, based on the inputted shotblast processing condition, where k1, k2, and k3 are coefficients (having dimensions), A is a dent unit area (mm^2), D is the diameter (mm) of a dent, HVa is the hardness (HV) of the projection material, d is the size (mm) of the particles of the projection material, v is a projection speed (m/sec), and HVw is the hardness (HV) of a product to be processed; a dent number computing step for computing the number of dents from an empirical formula N=k4 · M/(ρ · **[[d3/6]]** $\underline{d^3/6}$ · π) · (t/60) · As, based on the inputted shotblast processing condition, where k4 is a coefficient (having dimensions), N is the number of dents (piece · mm^2 · sec), M is a projection amount (kg/min) of the projection material, t is a processing time (sec), F is the density (g/cm^3) of the projection material, As is an evaluation area (mm^2); a second dent rate computing step for computing a dent rate from a theoretical formula C=100{1-exp(-A · N/As)}, based on the computed dent unit area, said number of dents, and an evaluation area arbitrarily set, where C is a dent rate (%) (coverage), A is a dent unit area (mm^2), N is the number of dents (piece · mm^2 · sec), As is the evaluation area (mm^2); a fifth calculating step for calculating a drawing dent unit area, the number of dents to be drawn, a drawing evaluating area, that are necessary to display a dent distribution status by a drawing device, based on the computed dent unit area and said number of

dents, and the evaluation area arbitrarily set, a sixth calculating step for performing calculations necessary to display in the drawing evaluation area a dent pattern of said number of dents to be drawn, each of the dents having the drawing dent unit area; and a step for displaying or printing by the drawing device the dent rate and the results of the calculations performed by the sixth step. Accordingly, supplying an arbitrary shotblast processing condition enables a computer to simulate drawing the dent rate and the dent distribution diagram. Therefore, the method ~~of claim~~ 3 provides an excellent practical effect in that the shotblast processing condition setting can easily be made for obtaining a desired dent distribution status for any one of a variety of products.

Page 15, replace the paragraphs beginning on line 5 through line 12 with the following amended paragraphs:

Then, the computer calculates the dent unit area from the empirical formulas A= π **[[D2/4]]** $\underline{D^2/4}$ and D=k1 · d · {1-exp(k2 · HVa/HVw)}/{1-exp(k3 · V)} (in the dent unit area calculation step) and calculates the number of dents per unit evaluation area from the theoretical expression C=100{1-exp(-A · N/As)}, based on the dent unit area and target dent rate, both calculated in the former step, and on the evaluation area arbitrarily set.

Next, the processing time is calculated from the empirical formula N=k4 · M/(ρ · **[[d3/6]]** $\underline{d^3/6}$ · π) · (t/60) As, based on the number of dents per unit evaluation area computed in the former step.

Page 15, replace the paragraph beginning on line 30 through page 16, line 7 with the following amended paragraph:

Then, the computer calculates the dent unit area from the empirical formulas A= π **[[D2/4]]** <u>$D^2/4$</u> and D=k1 · d · {1-exp(k2 · HVa/HVw)}/{1-exp(k3 · V)} (in the dent unit area calculating step) and calculates the number of dents per unit evaluating area from the theoretical expression C=100{1-exp(-A · N/As)}, based on the dent unit area and target dent rate, both calculated in the former step, and on the evaluation area arbitrarily set. The computer then calculates the projection amount from the empirical formula N=k4 · M/(ρ · **[[d3/6]]** <u>$d^3/6$</u> · π) · (t/60) · As, based on the number of dents per unit evaluation area calculated in the former step.

Page 16, replace the paragraphs beginning on line 25 through page 17, line 1 with the following amended paragraphs:

Then, the computer calculates the number of dents per unit evaluation area from the empirical formula N=k4 · M/(ρ · **[[d3/6]]** <u>$d^3/6$</u>· π) · (t/60) · As and calculates the dent unit area from the theoretical expression C=100{1-exp(-A · N/As)}, based on the number of dents per unit evaluation area calculated in the former step, the target number of dents, and the evaluation area arbitrarily set.

Next, the computer computes the projection speed from the empirical formulas A= π **[[D2/4]]** <u>$D^2/4$</u> and D=k1 · d · {1-exp(k2 · HVa/HVw)}/{1-exp(k3 · V)}.